REMARKS

1. The Amendments and the Support Therefor

One claim (11) has been canceled, eight new claims (14-21) have been added, and no claims have been amended to leave claims 1-10 and 21-21 in the application. No new matter has been added by the new claims, wherein:

- New claim 14 finds support in original claim 1, and also in the Abstract and at page 19 line 2.
- New claim 15 finds support in original claim 2.
- New claim 16 finds support in original claim 4.
- New claim 17 finds support in original claim 5.
- New claim 18 finds support in original claim 6, and also at page 10, final paragraph.
- New claim 19 finds support in original claim 7, and also at page 10, final paragraph.
- New claim 20 finds support in original claim 9.
- New claim 21 finds support in original claim 10.

Further comments regarding the new claims are set out below at Section 6 below.

2. Section 1 of the Office Action: Rejection of Claims 1-5 and 7-13 under 35 USC §103(a) in view of U.S. Patent 6,580,825 to *Bhaskar*

Kindly reconsider and withdraw the rejection of claim 1. Claim 1 recites that the *local* mean, the *local* standard deviation, the *local* maximum and the *local* minimum of measurements of an input image signal are calculated; that *local standard* coordinates which are independent of brightness and contrast are computed; and that an output image signal is formed from these *standard* coordinates. As the Office Action acknowledges, *Bhaskar* "does not expressly call for computing therefrom local standard coordinates which are independent of brightness and contrast." Rather, as discussed at column 4 line 32 onward (particularly at column 4 line 32-column 5 line 3), *Bhaskar* uses *global* measurements – the mean and standard deviation of the RGB colors over the *entire* image, and luminance over the *entire* image – rather than local measurements. See, e.g., steps 42-48 in FIG. 4A and column 4 lines 38-column 5 line 2:

The different colors, e.g., RGB colors, and the overall luminance of the image will be referred to herein as channels. . . . . The contrast enhancement method uses: 1) the standard deviation for each channel to determine a color weighting factor for each respective color; 2) the standard deviation for the luminance channel to determine an overall stretch factor; and 3) the mean for each color to serve as an anchor from which the stretching is based. . . . . Histograms are generated for the RGB and overall luminance channels in step 42, along with the total number of pixels in the image. *The histograms are global descriptions of the appearance of the image. The histograms chart the number of pixels at each tone level, e.g., 0-255, for each RGB channel.*

(Emphasis added.) *Bhaskar*'s global mean, standard deviation, etc. thus serve as quantities which characterize the histograms, with both the global mean, standard deviation, etc. and the histograms characterizing the *entire image* – an approach which is conventional in *Bhaskar*'s field, and which is significantly different from Applicant's use of local quantities. *Bhaskar* calculates these quantities so as to calculate an "overall stretch factor" used to amplify the dynamic range of the colors in the image, and thereby attain greater contrast. See, e.g., column 1 line 67-column 2 line 19:

An *overall* stretch factor that is used to stretch the dynamic range of all the colors and is generated based on the *standard deviation of the tone levels for the overall luminance of the image.* . . . . The contrast enhancement method analyzes image characteristics, such as the mean tone level and standard deviation of the tone levels for the overall luminance of the image and the standard deviations of the tone levels for the different colors to determine the level of improvement that can be applied to the image.

(Emphasis added.) The Office Action then reasons that the use of local coordinates would be obvious because *Bhaskar* "discloses that no modification is necessary if the standard deviation in the luminance is greater than the contrast threshold." See column 7 line 20 onward. However, this is done because "if the standard deviation of the overall luminance is greater than a contrast threshold the image is considered to have an adequate contrast and, thus, no changes are made to the image" (column 2 lines 27-30). It is not understood how this is in any way relevant to use of local coordinates, and it is not seen how this in any way would lead an ordinary artisan to the use of local quantities as opposed to global ones. Applicant's claims recite that local standard coordinates which are independent of brightness and contrast are computed; how is this in any way suggested by *Bhaskar*'s teaching that one need not calculate local (or any other) values at all if contrast is already

sufficient?

In view of the foregoing, kindly withdraw the rejection of claim 1 and its dependent claims 2-11. If the rejection is maintained, kindly explain in greater detail where and how *Bhaskar* – or any other reference of record, or any generally known knowledge in the art – would truly lead one who has no knowledge of the invention to implement the use of the recited local standard coordinates (which, as noted above, are notably different from the conventional practice of using global measures). Such a detailed explanation is required under current §103(a) standards. See, e.g., *KSR International Co. v. Teleflex Inc.*, 82 USPQ2d 1385, 1396 (U.S. 2007) ("To facilitate review, this [obviousness] analysis should be made explicit . . . .rejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness").

Reconsideration and withdrawal of the rejections of the dependent claims, or alternatively a more detailed and reasoned statement regarding obviousness, is similarly required.

Regarding claim 2, it is noted that the cited column 7 lines 38-45 or *Bhaskar* do *not* disclose calculation of local quantities, with use of local z-scores; rather, these passages discuss use of global quantities, as discussed earlier.

Regarding claim 3, *Bhaskar* does not in fact disclose any parallel computation.

Regarding claim 4, while column 8 lines 16-35 (and more particularly equation 5) of *Bhaskar* includes a quantity reflecting "lum_max - lum_min", this is not used to calculate a standard coordinate as in the claimed invention, but an overall stretch factor.

Regarding claim 5, the cited passage at column 8 lines 1-8 of *Bhaskar* concerns the decision as to whether to employ a full overall stretch factor or a minimal dynamic range stretch, and it does not suggest the matter of claim 5.

Regarding claims 6-8, these are discussed below since claim 7 depends from claim 6, and claim 8 is stated to be rejected on the same basis as claim 6.

As for claim 9, column 5 lines 27-30 of *Bhaskar* does not in fact mention grey scales, nor does it mention whether saturation is preserved, and it is simply not seen how the matter of claim 9 is in any way obvious in view of these passages.

Similarly, regarding claim 10, column 5 lines 34-42 of *Bhaskar* contain no indication of whether saturation is preserved, and thus claim 10 is believed to be novel and unobvious.

Regarding independent claim 12 and its dependent claim 13, these are submitted to be novel and unobvious for the same reasons as claims 1 and 7.

3.   **Section 2 of the Office Action: Rejection of Claim 6 under 35 USC §103(a) in view of U.S. Patent 6,580,825 to *Bhaskar* and U.S. Patent 6,826,310 to *Trifonov***

Regarding claims 6-8, an ordinary artisan in this field would not see any reason to combine the matter of *Bhaskar* and *Trifonov*. Although the cited column 12 lines 15-26 in *Trifonov* mentions logarithms, this appears to be done in the context of taking logarithms of portions of the brightness histograms constructed for the entire image. It is simply not seen how or why this would lead an ordinary artisan to perform the step of claim 6. A logarithm is a common mathematical operation, known to any of skill in the art. However, the choice of the variables to be used in a logarithmic function is a matter of discretion, and here the mere mention of logarithmic functions in *Trifonov* does not in any way truly lead one to contemplate the operations of claim 6, particularly when considered in conjunction with its parent claim 1. As for claim 7, column 6 lines 60-67 of *Bhaskar* relates to color weighting factors, and not to the opponent responses noted in claim 7. As with the rejections above, kindly withdraw these rejections, or alternatively provide a more detailed and reasoned statement regarding obviousness so that we may better respond.

4.   **Section 2 of the Office Action: Objection to Claims 8-11 under 35 USC 1.75(c)**

These objections are not understood, since the claims, as amended in the Preliminary Amendment filed May 27 2005 eliminated all multiple dependencies. The Preliminary Amendment was clearly received and processed by the Office, since the amended claims are reflected in corresponding U.S. Publ'n. 2006/0110052. If the objection is maintained, kindly explain.

5.   **Section 3 of the Office Action: Rejection of Claim 11 under 35 USC §101**

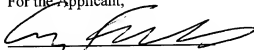This rejection is obviated by the cancellation of claim 11.

6. **New Claims 14-21**

New claims 14-21, which recite matter similar to that in claims 1, 2, 4-7, 9, and 10, are submitted to be allowable for at least the same reasons as claims 1, 2, 4-7, 9, and 10.

7. **In Closing**

If any questions regarding the application arise, please contact the undersigned attorney. Telephone calls related to this application are welcomed and encouraged. The Commissioner is authorized to charge any fees or credit any overpayments relating to this application to deposit account number 18-2055.

For the Applicant,

Craig A. Fieschko, Reg. No. 39,668
CUSTOMER NO. 25005
DEWITT ROSS & STEVENS S.C.
2 E. Mifflin St., Suite 600
Madison, WI 53703-2865
Telephone: (608) 395-6722
Facsimile: (608) 252-9243
cf@dewittross.com